

**Amendments to the Claims:**

Please amend claims 74-84, cancel claims 7, 25-73, and add new claims 91-97.  
This listing of claims will replace all prior versions, and listings of claims in the application:

**Listing of Claims:**

1-73. (Canceled)

74. (currently amended): A nucleic acid vector **backbone** having a sequence at least 95% identical to the full-length of a sequence of SEQ ID NO:297, wherein the vector comprises at least one cytosine to non-cytosine substitution within a CpG dinucleotide, wherein the CpG dinucleotide is in a motif of a formula 5' purine-pyrimidine-C-G-pyrimidine-pyrimidine-3'.

75. (currently amended): The nucleic acid vector **backbone** of claim 74, having a sequence at least 99% identical to the full-length of SEQ ID NO:297.

76. (currently amended): The nucleic acid vector **backbone** of claim 74, wherein the cytosine to non-cytosine substitution is cytosine to guanine.

77. (currently amended): The nucleic acid vector **backbone** of claim 74, wherein the nucleic acid vector comprises:

G at nucleotides 784, 1161, 1218, and 1966;

A at nucleotides 1264, 1337, 1829, 1874, 1940 and 1997; and

T at nucleotides 1963 and 1987.

78. (currently amended): The nucleic acid vector **backbone** of claim [[74]]  
77, wherein the nucleic acid vector further comprises G at nucleotides 1831, 1876, 1942, and 1999.

79. (currently amended): A nucleic acid vector **backbone** comprising the nucleic acid vector backbone of claim 74 or claim 78, wherein the vector further comprises a polynucleotide encoding ~~an autoantigen targeted in~~ a self-protein associated with an autoimmune disease.

80. (currently amended): The nucleic acid vector **backbone** of claim 79, wherein the ~~autoantigen comprises a polynucleotide encoding a myelin protein~~ autoimmune disease is multiple sclerosis.

81. (currently amended): The nucleic acid vector **backbone** of claim 80, wherein the myelin self-protein associated with multiple sclerosis is selected from the group consisting of myelin basic protein (MBP), proteolipid protein, myelin associated glycoprotein, cyclic nucleotide phosphodiesterase, myelin-associated glycoprotein, myelin-associated oligodendrocytic basic protein; alpha-B-crystallin and myelin oligodendrocyte glycoprotein.

82. (currently amended): The nucleic acid vector **backbone** of claim 79, wherein the ~~autoantigen comprises a polynucleotide an insulin protein~~ autoimmune disease is insulin dependent diabetes mellitus (IDDM).

83. (currently amended): The nucleic acid vector **backbone** of claim 82, wherein the insulin self-protein associated with insulin dependent diabetes mellitus (IDDM) is selected from the group consisting of tyrosine phosphatase IA2, IA-2 $\beta$ , glutamic acid decarboxylase (65 and 67 kDa forms), carboxypeptidase H, heat shock proteins, glima 38, islet cell antigen 69 KDa, p52, islet cell glucose transporter GLUT-2, insulin, proinsulin and preproinsulin.

84. (currently amended): The nucleic acid vector **backbone** of claim 74, further comprising a pharmaceutically acceptable carrier.

85. (previously presented): A nucleic acid vector comprising a nucleic acid sequence encoding myelin basic protein and a vector backbone comprising at least four GpG motifs of a formula 5' pyrimidine-purine-G-G-pyrimidine-pyrimidine-3'.

86. (previously presented): The nucleic acid vector of claim 85, wherein the vector backbone has a sequence at least 95% identical to the full-length of SEQ ID NO:297.

87. (previously presented): The nucleic acid vector of claim 85, wherein the vector backbone has a sequence at least 99% identical to the full-length of SEQ ID NO:297.

88. (previously presented): The nucleic acid vector of claim 86, wherein the vector backbone comprises G at nucleotides 784, 1161, 1218, and 1966.

89. (previously presented): The nucleic acid vector of claim 88, wherein the vector backbone further comprises G at nucleotides 1831, 1876, 1942, and 1999.

90. (previously presented): The nucleic acid vector of claim 85, further comprising a pharmaceutically acceptable carrier.

91. (new): A pBHT1 vector having a nucleic acid sequence of ATCC Deposit No. \_\_\_\_\_.

92. (new): The pBHT1 vector of claim 91, wherein the vector further comprises a polynucleotide encoding a self-protein associated with an autoimmune disease.

93. (new): The pBHT1 vector of claim 92, wherein the autoimmune disease is multiple sclerosis.

94. (new): The pBHT1 vector of claim 93, wherein the self-protein associated with multiple sclerosis is selected from the group consisting of myelin basic protein (MBP), proteolipid protein, myelin associated glycoprotein, cyclic nucleotide phosphodiesterase, myelin-associated glycoprotein, myelin-associated oligodendrocytic basic protein; alpha-B-crystallin and myelin oligodendrocyte glycoprotein.

95. (new): The pBHT1 vector of claim 92, wherein the autoimmune disease is insulin dependent diabetes mellitus (IDDM).

96. (new): The pBHT1 vector of claim 95, wherein the self-protein associated with insulin dependent diabetes mellitus (IDDM) is selected from the group consisting of tyrosine phosphatase IA2, IA-2 $\beta$ , glutamic acid decarboxylase (65 and 67 kDa forms), carboxypeptidase H, heat shock proteins, glima 38, islet cell antigen 69 KDa, p52, islet cell glucose transporter GLUT-2, insulin, proinsulin and preproinsulin.

97. (new): A pBHT1 vector having a nucleic acid sequence of ATCC Deposit No. \_\_\_\_\_ comprising a polynucleotide encoding myelin basic protein (MBP).